

Remarks

Applicants thank the Examiner for the indication that claim 31 is allowed. After entry of the foregoing amendments, claims 1-9 and 31 are pending. Claims 10-30 are withdrawn as being directed to non-elected subject matter.

Claims 1 was amended herein. It is respectfully asserted that no new matter is added as a result of these amendments. The amendments to claim 1 are supported at least by claim 1 as originally presented and by the specification. Specifically, the limitations regarding A—B have been divided into separate clauses, each of which independently define optional substituents that were included in the original claim as filed. The addition of the clarifying language regarding R with respect to hetero atoms “selected from the group consisting of sulfur and oxygen,” is supported in the specification at least at page 4, lines 14 to 18.

The pending claims stand variously rejected. The rejections are respectfully traversed as discussed below.

Improper Markush Rejection

Claims 1-9 stand rejected under a judicially created doctrine as being drawn to an improper Markush group. The Office action asserts that the claims lack unity of invention because the compounds do not “have a community of chemical or physical characteristics which justify their inclusion in a common group, and that such inclusion is not repugnant to principles of scientific classification.” (Office action at 2, citing *In re Jones*, 74 USPQ 149 (CCPA 1947).)

Applicants respectfully submit that this is not the standard. The Manual of Patent Examining Procedure (“MPEP”) states that

Since the decisions in *In re Weber*, 580 F.2d 455, 1998 USPQ 328 (CCPA 1978) and *In re Haas*, 580 F.2d 461, 198 USPQ 334 (CCPA 1978), it is improper for the Office to refuse to examine that which applicants regard as their invention, unless the subject matter lacks unity of invention. *In re*

Harnish, 631 F.2d 716, 206 USPQ 300 (CCPA 1980); and *Ex parte Hozumi*, 3 USPQ2d 1059 (Bd. Pat. App. & Int. 1984). Broadly, unity of invention exists where compounds included within a Markush group (1) share a common utility, and (2) share a substantial structural feature disclosed as being essential to that utility.

MPEP § 803.02. Applicants submit that the Markush group in question meets the standard for unity set forth in MPEP § 803.02.

The compounds of the present invention are disclosed as being cyclopropylindole (CPI) compounds with structures that allow them to be joined to combinatorial chains. (Specification at p. 3, line 8-9.) The claimed compounds are useful in the synthesis of collections of CPI precursors. (Specification at p. 5, line 1-2.) CPI compounds are a class of highly potent antitumor antibiotics. (Specification at p. 1, line 28-29.) Thus, unity of invention exists because the compounds share a common utility – use in synthesizing CPI precursors which are useful as antitumor antibiotics – and because the members of the Markush group share a substantial structural feature disclosed as being essential to that utility – the required carboxy or carboxy ester substituent which is essential as the attachment point to combinatorial chains.

Moreover, as is shown in Denny et al., which is discussed below, it is common in the art to define the compounds of the present invention in this manner. In light of the above, Applicants respectfully request that the improper Markush group rejection be withdrawn and the claim examined as a whole.

Rejections Under 35 U.S.C. § 112

Claims 1-9 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

First, the Office action asserts that the phrase “preferably of up to 12 carbon atoms” in the definition of “R” renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. Applicants respectfully submit that the amendment to claim 1 deleting the term “preferably” obviates this rejection and request that it be withdrawn.

Second, the Office action asserts that the kind of hetero atom intended in the definition of “R” is unknown. Applicants respectfully submit that the amendments to claim 1 obviate this rejection. Applicants have limited the claimed hetero atoms to sulfur and oxygen. This amendment is supported in the specification at page 4, lines 14 to 18. As such, applicants submit that one of skill in the art would understand the scope of the claimed invention. Therefore, applicants request that this rejection be withdrawn.

Rejections Under 35 U.S.C. § 103

Claims 1-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Denny et al. (WO 98/11101). The Office action states that Denny et al. teaches a generic group of cyclopropylindoles which embraces Applicants’ claimed compounds. The Office action further states that the presently claimed invention differs from the reference by reciting specific species and a more limited genus than the reference, but that it would have been obvious to a skilled artisan to select any of the species of the genus taught by the reference, including those claimed herein, because the skilled artisan would have had a reasonable expectation that any of the species of the genus would have had similar properties and the same use as taught for the genus as a whole. Moreover, the Office action states that a skilled artisan would have been motivated to select the claimed compounds from the genus in the reference since such compounds would have been suggested by the reference as a whole.

Finally, the Office action states that a prior art disclosure of a genus is sufficient to render a species falling within that genus *prima facie* obvious.

Applicants respectfully submit that the Office action has failed to set forth a *prima facie* case of obviousness of the claimed invention. For example, Denny et al. does not disclose a fused benzene ring which is substituted as is claimed in the present invention. Claim 1 states: "A and B collectively represent a fused benzene ring, which is substituted by a CO₂H or CO₂R group." This substitution is important to the utility of the claimed compounds. The claimed compounds are designed to be used in and/or made by combinatorial synthesis. Without the substitution on the fused benzene ring, it would not be possible to use the claimed compounds for their intended utility.

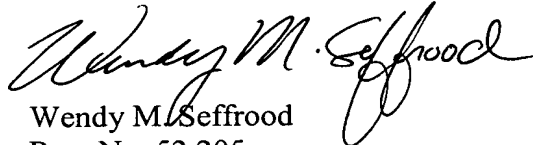
One of ordinary skill in the art would not be lead to the compounds of the instant invention from the disclosure in Denny et al. Nowhere in Denny et al. is a substituted fused benzene ring mentioned or suggested. Nor is it suggested that the disclosed compounds be utilized in combinatorial synthesis. Thus, it is submitted that the claimed fused benzene ring compounds are not obvious in view of Denny et al.

Further, applicants submit that Denny et al. does not lead a skilled artisan to the alternatively claimed fused pyrrole compounds. Applicants have disclaimed compound 30 of Denny et al. Moreover, when A—B of the presently claimed invention is a fused pyrrole compound, Y is O-Prot, which compound is nowhere disclosed or suggested by Denny et al. Instead, Denny et al. discloses pyrrole compounds wherein Y is a nitrogen-based or sulfur-based substituent bound to the benzene ring. Thus, it is submitted that the claimed fused pyrrole compounds are not obvious in view of Denny et al.

Conclusion

In light of the foregoing amendments and arguments, Applicants submit that the pending claims are in condition for allowance and earnestly solicit a Notice of Allowance.

Respectfully submitted,


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